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PRUSSIAN RAILWAY RATE-MAKING AND ITS RESULTS

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The State of Prussia has a system of railways more than 21,000 miles (34,130.73 kms.¹) in length, owned and operated by the government. It is the best example of an extensive system of government railways; and ever since 1880, when Prussia actively began the policy of buying up the large private railroads, there has been constant effort to perfect the all-important work of rate-making.

Fundamental differences clearly exist between conditions in the United States and Prussia.² The average length of haul in Prussia is but 70.7 miles, as compared with 244.3 in the United States.³ The average shipment in the United States is very much larger, partly because the Prussian railways not only carry smaller quantities of freight, but in addition they do a parcel business. Furthermore, a large proportion of American freight consists of raw materials, while in Prussia a larger part consists of high-grade manufactured products. Items of income as well as of expense are different in the two countries—wages, building materials, fuel and other of the separate factors commanding different prices. In the passenger business, the denser and lower grade of traffic is a vital difference. Again, the huge area of the United States is in striking contrast with the small and compact area of Prussia. There are, moreover, radical differences in political and governmental conditions in the two countries, that require careful consideration by those who are studying the transportation policies of Prussia and the United States.

Foreign experience in government rate-making must necessarily be viewed with the greatest caution. Yet, though bearing in

¹ Bericht über die Ergebnisse des Betriebs der Vereinigten Preussischen und Hessischen Staatseisenbahnen, p. 6. Figures for March 31, 1905.

² *Ibid.*; Die Verwaltung der Öffentlichen Arbeiten in Preussen, 1890-1900; Prof. W. Lotz, Verkehrsentwicklung in Deutschland; W. C. Noyes, American Railroad Rates, Ch. VIII.

³ Year 1904, the railroads of the United States being considered as *one* system.

mind that what Prussia has accomplished does not demonstrate that similar accomplishments could be here attained, it is pertinent, in the face of the rapid extension of government ownership in foreign countries and the occasional waves of agitation in the United States, to analyze the most highly developed system of government rate-making in the world and to study its results.

I. *Rate Administration in Prussia.*⁴

Before 1895 the control over rates and their promulgation was decentralized. The Minister of Public Works was finally responsible, but under him there were eleven railway directorates, who were advised and aided in the immediate making of rates by seventy-five administrative district officials and a commission of private railways. In 1895, however, the administration was reorganized to the great benefit of the Prussian rate system.

The Minister of Public Works is still the final authority. The directorates have, however, been reorganized and their number increased to twenty-one. Distributed over Prussia, each in a given area, they are entrusted with the immediate work of rate-making. But really greater influence over rates than is exercised by the directorates is exerted by the circuit councils or "*Bezirkseisenbahnräthe*." They are boards of legal standing with the duty of thoroughly keeping in touch with commercial and industrial conditions, and of advising the circuit directorates on matters important in rate-making.

These councils (*Bezirkseisenbahnräthe*), now nine in number,⁵ and with a membership consisting of representatives of industrial, commercial and financial organizations, have made it largely possible to bring Prussian rates into conformity with economic needs. There is, also, a national advisory council, similarly constituted and with forty-two members, whose duty it is, at least twice a year, to advise the central administration on matters of rate-making, just as the circuit councils do in the case of the directorates. To still further facilitate rate-making, there are the "general conference,"

⁴ B. H. Meyer, in U. S. Industrial Commission, Vol. IX, p. 911; *Die Verwaltung der Öffentlichen Arbeiten in Preussen* (1901), p. 53; *Die Entwicklung der Gütertarife* (Berlin, 1904), pp. 11-12; W. Hoff, "Zur Wiederkehr des zehnten Jahrestages der Neuordnung der preussischen Staatseisenbahnverwaltung," in the *Archiv für Eisenbahnwesen*, 1905, pp. 307-330.

⁵ *Die Verwaltung*, etc., p. 53 (*Ibid.*).

composed of representatives of all German railroads; the "tariff commission," which is a subordinate part of the general conference and which considers petitions from shippers; and the "committee of shippers" which does much the same work as the tariff commission, but from the standpoint of the public. The Imperial Government, through the "Reichs Eisenbahnamt," retains the constitutional right to control the general policy of rate-making in Prussia, as well as in all other German states.

The Prussian railway officials have long seen that if they wish to avoid a system so rigid as to be fatal to industry, there must be centralization of rate administration, and co-operation between the shippers and all the railroads of Prussia. The result is a centralization of rate-making in the Minister of Public Works, and the district directorates, advised by the legally constituted national and circuit councils, which are bodies designed to secure the industrial and commercial information required for the intelligent adjustment of rates to economic conditions.

II. *The Prussian Freight Rate System.*

A mistaken idea has been fostered by many persons that Prussian freight tariffs have of necessity been reduced to a rigid distance basis; and that they have approached simplicity itself because a yard-stick, instead of industrial conditions and human judgment, has seemingly been the determining factor. It is true that the schedules are somewhat simpler than those in the United States, largely because a small and compact country permits greater simplicity, but nothing is more fallacious than the notion that distance is the sole factor, and that industrial and commercial needs are disregarded. If any generalization is permissible, it is that distance receives greater and commercial needs slightly less attention than are accorded them in the United States.

The Normal Freight Schedules.^a—The class rate schedules of Prussia, constituting the simplest part of the freight tariff system, are given in the following table:

^a Sammlung von Vorschriften betreffend die Gütertarife (1902), p. 10.

Normal Freight Transportation Charge.

DISTANCES.	LESS THAN CAR-LOAD LOTS.				CAR-LOAD LOTS.						
	Fast Freight.		Slow Freight.		General.		Special.				
	General Fast Fgdt.	Special Fast Fgdt.	General Slow Fgdt.	Special Slow Fgdt.	A ₁	B	A ₂	I	II	III	
		Ra'es in Pfennig per Kilometer									
1 to 50 km.....	22		11							.....
51 to 200 km.....	20		10							.....
201 to 300 km.....	18		9							.....
301 to 400 km.....	16		8							.....
401 to 500 km.....	14		7							.....
Over 500 km.....	12		6							.....
All distances.....				87	6.7	6	5	4.5	3.5	.....
1 to 100 km.....										2.6	
Over 100 km.....										2.2	
		Dispa'ch Charge in Pfennig per 100 Kilograms.									
1 to 10 km.....	20		10			8	6				
11 to 20 km.....	22		11			9					
21 to 30 km.....	24		12			10					
31 to 40 km.....	26		13			11		6	6	6	
41 to 50 km.....	28		14			12					
51 to 60 km.....	30		15			12					
61 to 70 km.....	32		16			12					
71 to 80 km.....	34		17			12	9				
81 to 90 km.....	36		18			12			9	9	9
91 to 100 km.....	38		19			12					
Over 100 km.....	40		20			12	12	12	12	12	

Separate classifications are made for piece goods ("Stückgutklassen") and carload lots ("Wagenladungsklassen"). Class rates are divided into fast freight or express rates and slow freight rates. Fast freight rates are again divided into a general fast freight class and a special class for specified freight, such as bees, bread, butter, fish, clams, vegetables, milk, fresh berries and plants.⁸ Slow freight for less than carload lots is also divided into a general class and a special class for specified piece goods, already containing twenty-eight large specifications and many subdivisions, such as given kinds of foodstuffs and fodder, wood and woodenware, metal and metal wares, seeds, roofing, etc.⁹ The classification for carload lots is divided into two general classes and three special ("spezialtarife"). General class A₁ indicates the rates for general freight weighing less than 10,000 but more than 5,000 kilograms; and

⁸ Over 726 km. as in general slow freight.

⁹ Deutscher Eisenbahn Gütertarife, Teil I, Abteilung B, (1906).

⁹ Eisenbahn-gütertarif, Teil I, Abteilung B, pp. 25-27 (1906).

class B indicates the rate for general freight weighing at least 10,000 kilograms. The "spezialtarife" are more complicated, each indicating the special carload rate on some specified commodity. Twenty-eight pages¹⁰ of the German tariff schedule for 1906 are given to the enumeration of the commodities coming within classes I, II and III. Generally, class I includes raw products, class II intermediate products and class III manufactured products; but there are many exceptions to this, and products are at times shifted from one class to another. "Spezialtarif" A2 covers freight in special tariffs I and II, when the weight is at least 5,000 but less than 10,000 kilograms. Goods in class III, with weight less than 10,000 but over 5,000 kilograms, come within special tariff II.

As the table indicates, the freight charge for goods carried under the normal class rates consists of two items: (1) A transportation charge for the actual carrying of the freight, and (2) a dispatch fee as a terminal charge. For less than carload lots of special fast freight and general freight, the transportation charge is the same,—decreasing from 11 pfennig per metric ton kilometer for the first 50 kilometers (3.8 cents per short ton mile) to 6 pfennig for all distances over 500 kilometers (2.076 cents per ton mile). For example, if special fast freight or general slow freight is shipped a distance of 400 kilometers, it pays a rate of 11 pfennig per metric ton kilometer for the first 50 kilometers, 10 for the next 150, 9 for the next 100, and 8 pfennig for the last 100 kilometers. General fast freight pays just twice this transportation charge. The rate for special slow freight is 2.76 cents per ton mile for any distance up to 726 kilometers, and then it becomes the same as the rate on general slow freight. The rates for carload lots A1 and B are 2.3 and 2.07 cents, respectively, per ton mile for all distances; those for special classes A2, I and II are 1.7, 1.55 and 1.21 cents, respectively, per ton mile for distances up to 100 kilometers, and .76 cents per ton mile for all distances thereafter. The dispatch fees are, also, graded according to distance up to 100 kilometers. Carload lot A1 and all less than carload lots except general fast freight, pay the same terminal charges; general fast freight pays double this; class B pays a charge which remains unchanged for distances over 50 kilometers; and all the special carload classes are given identical dispatch fees.

¹⁰*Ibid.*, pp. 28-56.

The Live Stock Tariff.—The German government publishes a separate schedule of rates applicable to live stock.¹¹ The option is given to the shipper either to pay his rate on the basis of number of animals shipped, or of floor space occupied. On the basis of numbers, the rate varies according to distance, size and kind of animals, total number, and kind of car and train selected. On the basis of floor space occupied, the rate is per square meter and varies according to distance, size and kind of animals, kind of car and train selected, and for some animals, such as horses, is different east than west of a line drawn through Leipsig and Halle. In every instance there is a dispatch fee in addition to the transportation rate.

The "Ausnahmstarife."—Sixty-three per cent of the Prussian traffic does not, however, come within the classified schedules, but under special commodity rates or "ausnahmstarife." The practice of giving exception rates to selected commodities is the most striking part of the Prussian railroad rate system. Professor W. E. Lotz aptly calls it a kind of "Merkantelsystem."¹² With the deliberate purpose of regulating industry and commerce through the powerful medium of freight rates, sixty-three per cent of the traffic is given rates generally about one-half as high as the classified rates and seemingly unusually low as compared with the rates enforced in neighboring countries. The rates are given to build up particular industries, to promote specified districts, to protect German railroads against foreign railways and waterways, to overcome emergencies, to build up German seaports, to promote the German export trade and to discourage the entrance of specified imports.¹³

To build up the shipbuilding industry, iron and steel is given an exception rate from producing points to the shipyards. Exception rates on many raw materials and on fertilizers are granted to aid agriculture. Fuel receives a low rate to foster manufacturing in particular and all industry in general. A special rate is given

¹¹ Deutscher Eisenbahn-Tariff, Teil I, April, 1906. See also, British Diplomatic and Consular Rept. No. 574, Misc. Series,—Report of Prussian Rys, (1902).

¹² Verkehrsentwicklung in Deutschland, p. 66.

¹³ Die Verwalten der Öffentlichen Arbeiten in Preussen, pp. 272-301; Ergebnisse des Betriebs der Preussischen und Hessischen Staatsbahnen (1904), p. 168; Die Entwicklung der Gütertarife der Preussisch-Hessischen Staatsbahnen, Berlin, 1904, p. 15; Solomon Huebner, Annals American Academy, Nov., 1904, Promotion of Commerce in Germany; British Rept. on Prussian Rys. (1902), p. 15; Wienenfeld; Die Nordwesteuropäischen Welthäfen, pp. 332-3; Lotz; Verkehrsentwicklung in Deutschland (1900), p. 64.

to cotton from German harbors to Silesia in order to build up the textile trades of Silesia.

To promote particular districts, coal, coke and briquettes from Westphalia to Hamburg and ports on the Weser are given lower rates, so as to counteract foreign competition at these ports and to develop Westphalia. Likewise, coal for steamers from Upper Westphalia to Danzig, East and West Prussia and Pomerania receives a lower rate. A typical instance of "ausnahmstarife," to draw traffic from foreign railways and waterways to Prussian railways, is the low rate on sugar from points in Russian Poland to Danzig and Königsburg, so as to prevent the sugar from going via Libau, Russia. Likewise, the low rates on hemp, flax, etc., from Russia to Germany, on cotton from Russian points to German harbors, and on petroleum from Roumania to Germany are typical instances. Emergency rates have, also, been occasionally granted. In 1891 special rates on grain were promulgated for long distances because of a crop failure; in 1893 a crop failure induced a special rate on straw and fodder; in the winter of 1898-9 an emergency rate on potatoes was granted to East Prussia; and in 1899 a special rate was made on all food and fodder destined to the Speerwald.

More frequent are the "ausnahmstarife" designed to build up German harbors. Prussia has granted preferential rates to Hamburg and Bremen so as to protect them against the harbors of Northwest and Southwest Europe, even at the expense of Prussian harbors. Preferential rates are granted on cotton, tobacco, fish, coffee, rice and other products in the trade between the German coast and the Rhine-Westphalia district so as to draw trade from the ports of Holland and Belgium.¹⁴ Similar rates are enforced on numerous commodities which are sent to Austro-Hungary, Russia and Roumania over German railways. In the aggregate all these rates aim to build up the German North Sea harbors at the expense of Dutch Belgian, Russian Black Sea and Austro-Hungarian ports.

Closely allied to these preferential rates and even more numerous are the rates designed to conform with the German tariff policy, in order to regulate exports and imports. The Levant and East African "ausnahmstarife" give rates from one-third to one-fifth as high as British rates from interior points to Piræus, Salonica,

¹⁴ *Annals American Academy*, Nov., 1904, Solomon Huebner, p. 106; Wiedenfeld, *Die Nordwesteuropäische Weidhåfen*, p. 322.

Constantinople, Odessa, Alexandria and numerous other places in the Levant, East Africa and points on Oriental and East African railroads. Likewise, to meet Austro-Hungarian sugar competition, preferential rates are given to sugar sent to Switzerland; to promote exports of corn, rape seed, malt, milk produce, etc., an export rate is granted to all nations, except Russia, bordering on Germany; export rates are enforced on brown coal and railway and tramway rolling stock to Roumania, on pig iron from Upper Silesia, Westphalia and Nassau to Austria, on various specified classes of iron and steel destined to foreign countries and German colonies, so as to meet the competition of Great Britain, and on liquor and spirits to Switzerland and France, iron and steel to Denmark and Russia, iron ore to Bohemia, cotton to Russia and starch to Italy. These are the main examples of how the Prussian government is employing its railroads to foster her export trade. A typical instance of the attempt to bar specified imports is the merely normal rate, from seaports to the interior, on agricultural produce which competes with German farmers, as contrasted with the reduced rates of agricultural produce within Germany so as to foster the German agricultural industries.¹⁵

III. *The System of Passenger Fares.*¹⁶

The general schedule of passenger fares which was enforced on Prussian state railways before October, 1906, is given in the following table:

*Normal Passenger Schedule.*¹⁷

	In Pfennig per Person—Kilometer.			
	I Class.	II Class.	III Class.	IV Class.
One-way tickets—express train.....	9.0	6.67	4.67	..
One-way tickets—passenger train	8.0	6.0	4.0	2.0
Return tickets	6.0	4.5	3.0	..
Sunday tickets	4.0	3.2	2.0	..
Summer and tourist tickets	6.0	4.5	3.0	..
Season tickets	6.3	4.67	3.27	..
Workmen's tickets .....	..	..	..	1.0

Baggage to the extent of 25 kilograms is permitted to go free in classes I, II and III.

¹⁵ Lotz, p. 66.

¹⁶ Verwaltung der Öffentlichen Arbeiten in Preussen, p. 54; Johnson, *American Railway Transp.*, p. 296; Denkschrift über die Reform der Personen und Gepäcktarife, by the Minister of Public Works (1905), pp. 14-23.

¹⁷ Die Verwaltung der Öffentlichen Arbeiten, p. 54.

There are four classes of passenger service for ordinary passenger, and three for express trains, and fares ranged respectively from 3.0 to 0.77 cents per mile and from 3.45 to 1.79 cents per mile. Return tickets were reduced to $1\frac{1}{2}$ times the one-way tickets, and workmen could travel for .38 cents per mile on special fourth-class tickets. Many exceptions were made to the regular passenger fares. Children below four years of age could travel free of charge and those below ten years for half the regular fare. School children, Sunday travelers, summer tourists, groups of persons, holders of season tickets, visitors of educational institutions and bathing establishments, invalids who have been in war, German soldiers, and inmates of hospitals and institutions for sick, blind, deaf and dumb and orphans were given special fares. With all tickets in the first three classes 25 kilograms of baggage were carried free of charge.

In 1906 several changes went into effect. Return tickets were abolished; but, to compensate for this, one-way fares in II and III class service on ordinary accommodation trains were reduced to the fares which were formerly granted on return tickets. Fares in class I were reduced to 7 pfennig and in class IV remained unchanged. Instead of a separate schedule of fares for fast trains, a fixed difference was established between fast and slow trains, and baggage to the extent of 25 kilograms is no longer carried free of charge. With these alterations, the above schedule is now enforced on Prussian railways. The changes were primarily influenced by the tax which in Prussia is levied on passenger tickets.

A separate schedule of fares is provided for the Berlin Circle Railway and suburban traffic.¹⁸ In case of the Circle Railway traffic, a fare of 15 pfennig II class and 10 pfennig III class is charged for any distance up to five stations, and double this fare is charged for greater distances. In the suburban traffic 15 pfennig II class and 10 pfennig III class is charged for distances of from 1 to 7.5 kilometers, double this for distances of from 7.6 to 15 kilometers, and treble it for distances of from 15.1 to 20 kilometers. For distances greater than this, 4.5 pfennig are added in class II and 3 pfennig in class III. With one exception, only second and third class service is given in this Berlin city and suburban traffic.

The fares on the Hamburg-Altonaer Railway,¹⁹ like the Berlin

¹⁸ *Verwaltung der Öffentlichen Arbeiten*, p. 57.

¹⁹ *Ibid.*, pp. 57-58.

Circle Railway fares, are on the two-zone basis, but with three, instead of two, classes of service. For distances not exceeding 4 kilometers the fares are 20 pfennig I class, 15 pfennig II class and 10 pfennig III class. For greater distances the fares are 35 pfennig I class, 20 pfennig II class and 15 pfennig III class. The result on both the Berlin and Hamburg-Altonaer railways is a schedule of fares at once more uniform and lower than the normal fares on Prussian railways.

IV. *Results, Comparisons and Conclusions.*

When the Prussian policy of state railroads was inaugurated it was officially declared that the railways were to be so managed (1) that the people were to obtain a railroad system which would lead to industrial development, and (2) that the finances of the state were not thereby to be impaired.²⁰ In the management of the roads it was, furthermore, the original intention of Chancellor Bismarck (1) that while the system was being built and enlarged the railroads were to be operated for profits, just as a private enterprise, (2) that as this was being completed the rates were to gradually approach the cost of transportation, and (3) that finally the rates were to be merely sufficient to meet the cost of transportation and were to be established into fixed schedules.²¹ During the development of the Prussian rate system the policy of the administration has been changed, and it has been found advisable and practicable to fulfil some of these declarations and to discard others. Prussian rate-making has its flaws as well as its virtues.

The Movement of Freight Rates.—Since the widespread introduction of state management, freight rates have followed a downward course. Reductions have been made both in the classifications and in the rates themselves. Many new items have been added to the classifications and large reductions have been obtained by shifting articles from higher to lower classes. In this way a reduction of 25 per cent has been secured since 1877 in the case of articles shifted from class B to special tariff I, 42 per cent in changes from class B to II, as much as 63 per cent in changes from class B to III, 22 per cent in shifts from class I to II, as much as 51 per cent in changes from class I to III, and from 26 to 37 per cent reduction

²⁰ Die Entwicklung der Gütertarife (Berlin, 1904), pp. 1-6.

²¹ Prof. Lotz, pp. 57-58.

in changes from class II to III.²² The extent to which reductions have been made by placing general package freight into special classes is seen in the increase in the number of special tariff items. In 1878 the "spezialtarife" embraced 160 items, but by 1904 this had increased to 364.

The greatest activity of the administration has, however, been in the enlargement of the traffic shipped under "ausnahmstarife." Marked reductions have been made in this way. From 1879 to 1903 coal shipped from the Ruhr district has had rate reductions amounting to from 10.4 to 26 per cent; coal shipped from Upper Silesia, likewise, has witnessed reductions of from 9.7 to 42.2 per cent, from Lower Silesia of from 5.0 to 25.2 per cent, and from the Sahr district of from 8 to 27 per cent. Rates on iron ore shipped between specified points have been reduced by from 33 to 44 per cent, rates on pig iron by from 10 to 35 per cent, on potassium salt, since 1882, by from 29 to 47 per cent, and on fertilizing lime by from 40 to 53 per cent.²³

Rate comparisons are at best misleading, and charges per ton mile make such comparisons even more questionable. Comparing, however, the Prussian per ton mile charge with those of neighboring countries, it is found that in 1902 the charge in Prussia was 1.238²⁴ cents, in France 1.33, in Austria 1.26 and in Hungary 1.24 cents.²⁵ For the same year the charge per ton mile in the United States was .76²⁶ cents. Though this marked difference between Prussian and American rates is made misleading by the prevalence of bulky freight and long distances in the United States, yet not even the German officials deny that American freight rates are generally lower.²⁷ The somewhat lower rates in Prussia than in the surrounding countries, of more like economic conditions, is, however, indicative of the progress made by the Prussian state railroads. Likewise, the fact that "on the Prussian private roads much higher, often very much higher, normal rates"²⁸ are enforced than on the Prussian state railroads and that the rate per ton per kilometer is slightly higher on the government roads of neighboring

²² Die Entwicklung der Gütertarife (Berlin, 1904), p. 14.

²³ *Ibid.*, pp. 18-20.

²⁴ *Ibid.*, p. 22.

²⁵ H. T. Newcomb, *Railway Rate Regulation in Foreign Countries*, p. 81.

²⁶ .78 cents in 1904.

²⁷ Entwicklung der Gütertarife, p. 23.

²⁸ *Ibid.*, p. 22.

German states are again indications that the Prussian state railroad rates are low as compared with the rates of other European railroads.²⁹

The Movement of Passenger Fares.—On the one hand, while Prussian freight rates are higher than American freight rates, Prussian passenger fares are distinctly lower. The average fare per passenger mile in the United States is 2.006 cents, while in Prussia it is but .93 cents.³⁰ This great difference is partly because out of the 8,343,651,715 person kilometers³¹ of Prussian travel in 1904, 7,875,546,842 were within the two lower classes, partly because of the multitude of special fares, and partly because the Prussian figure includes a large amount of suburban travel which in the United States is handled by street car companies.³²

On the other hand, while Prussian freight rates are steadily declining the passenger fares in the general schedules do not decline as rapidly. The earnings per passenger mile decrease, but it is due largely to the special fares and the increased travel in the lower classes—not to a reduction of the general fares. In consequence of this, in spite of the low general level, there is not the same contentment as in the case of freight rates. The situation has, perhaps, been somewhat changed by the reform of 1906.³³

Industrial and Commercial Results.—In the United States the predominating forces in the determination of freight rates have been commercial and industrial. Many persons, blinded by the presence of political, social, educational and military motives and the element of distance which have influenced the policy of Prussian rate-making, have been led to believe that freight rates in Prussia retard the growth of industrial and commercial interests. Pages of scholastic indictment have been written against the prevalence of distance considerations. But such charges hold only to a limited extent. Distance and mechanical uniformity are over-important only in case of the classified schedules, and that is why the normal schedules are the weakest part of the Prussian rate system. Freight shipped under these rates occasionally finds difficulty in going to

²⁹ Russian rates are excepted, because of the great preponderance of long-distance hauls

³⁰ *Ergebnisse des Betriebs*, etc. (1904), p. 45.

³¹ *Ibid.*, p. 43.

³² Prof. E. R. Johnson. *American Railway Transportation*, p. 296.

³³ Lotz, p. 69; also, *Denkschrift über die Reform der Personen und Gepäcktarife* (1905).

distant markets; and yet it must be borne in mind that the effect of distance considerations in a small and compact country such as Germany cannot be judged by the probable effect they might have in shipments from Chicago to New York. The far greater importance of distance in the normal tariffs of Prussia than even in the class rates of the American trunk line district causes them to yield less readily to commercial demands; but they are not "iron-clad." This is due to the constant watchfulness of the twenty-one railroad directorates, the nine circuit councils, the "landeseisenbahnrat," the general conference, tariff commission of railways and the committee of shippers. These destroy much of the rigidity which would otherwise prevail.

Chancellor Bismarck's plan to reduce all traffic to a fixed schedule has wisely been abandoned, as the administration soon found it incompatible with the promise to promote industry. The distinct tendency is toward the growing adoption of the "ausnahmstarife." As was shown above, many of these have been promulgated for the special purpose of building up particular industries and business in general. Largely because of the preferential rates the coal traffic in the Ruhr district³⁴ was swelled from 20,309,311 to 65,583,430 tons, or by over 223 per cent, in Upper Schlesien by over 183.5 per cent, in Lower Schlesien by over 115 per cent and in the Sahr district by over 124 per cent. Likewise the traffic in German pig iron increased by over 350 per cent,³⁵ and in potassium salt by over 549 per cent.³⁶ These are examples of the promotion of special industries. That industry in general has not been retarded is shown by the growth of the total Prussian freight traffic from 8,903,091,000 ton kilometers in 1879 to 30,592,390,130 in 1904.³⁷

The building up of export trade and North German harbors, while partly influenced by political considerations, has benefited not only Prussia but the industry and commerce of all Germany. Low rates on particular commodities to foreign and colonial markets have stimulated German exports and like a tariff wall have partly protected these industries against foreign competition. Contrary to the original plans of Bismarck, these rates tend to build up large cities; but this has been more at the expense of foreign seaports

³⁴ *Entwicklung der Gütertarife*, p. 18.

³⁵ *Ibid.*, p. 19.

³⁶ *Ibid.*, p. 20.

³⁷ *Die Ergebnisse des Betriebs*, etc. (1904), p. 165.

than at the expense of smaller German cities. Whether or not this is advisable, the building up of large cities has been a less marked result of freight rates in Germany than in the United States. It is also true that political influences are present; perhaps this would be fatal to government rate-making in the United States, but in Prussia it has chiefly taken this form of promoting exports, and in so doing has benefited German industry.

The policy of the Prussian government has been to build up river and canal transportation side by side and in co-operation with the state railroads. For example, from 1890 to 1900,³⁸ the state expended 10,831,100 marks for improving the Rhine, 795,000 for the Ems, 401,500 for the Weser, 3,631,100 for the Elbe, 3,403,700 for the Oder, 87,359,700 marks for the construction and improvement of canals, and 31,022,300 marks for the canalization of streams. This promotion of water transportation is not because of any failure of the Prussian railways,³⁹ but because certain state officials believe that canals are desirable for the transportation of bulky products over long distances, and for military purposes. River and canal rates in Germany are generally about one-third as high as railway rates,⁴⁰ largely because of these natural advantages and because they are based upon cost of maintenance, while the railway rates are partly based upon profits. It is the policy of the state to operate both the waterways and the railways, and through their unified activity to promote German industry. Whatever may be the wisdom of this policy, the revival of canal construction does not indicate the industrial and commercial failure of the state railways.

Conflicts of sectional interests sometimes prevent a change of railroad rates to conform strictly with industrial needs, but this is true, also, in the United States. The merchants in Prussia are satisfied with the present rates and their downward tendency as compared with previous rates; and, strange to say, they praise the relative stability of Prussian rates⁴¹ as loudly as many Americans laud the elasticity of American rates. Commercial and industrial

³⁸ *Die Verwaltung der Öffentlichen Arbeiten*, pp. 150-176.

³⁹ *Govt. Regulation of Rwy. Rates*, R. H. Meyer, in *Jour. of Pol. Econ.*, Feb., 1906.

⁴⁰ *Annals American Academy*, Nov., 1904, p. 104, S. Huebner, *Relation of the Government in Germany to the Promotion of Commerce*.

⁴¹ *Die Entwicklung der Gütertarife*, pp. 12-13.

considerations are not so controlling as in the United States; but, on the other hand, much has already been accomplished by the Prussian state railroads, and whatever is accomplished is done in the light of full publicity and not secretly with private parties. Rebates and personal discriminations are unknown on the Prussian state railways.

Financial and Technical Results.—Financially the Prussian state railroads have been highly successful. The desire of Bismarck, ultimately to reduce the rates to a basis of cost has been discarded from the policy of the administration. Freight rates have declined, but with the effect of increasing the profits to the state. In 1905 the passenger service yielded a gross income of 446,335,000 marks, the freight service of 1,073,600,000, and the income from miscellaneous sources was 98,182,000, a total of 1,618,117,000 marks. In the same year the total operating expenses amounted to 983,439,300 marks. There was consequently a surplus of 634,677,700 marks, or over \$151,000,000.⁴² If to the operating expenditure charges for interest, special funds, etc., are added, there was still in 1905 a net profit to the state of over \$120,000,000.⁴³ In 1904 the net profits equaled 7.17 per cent on the total railway capitalization of 8,824,957,896 marks.⁴⁴ Not only has the railway debt been steadily reduced in late years, but large sums have each year been turned into the state treasury to defray general state expenses. If all the railroad profits which have been turned into the state treasury had been used to pay the railroad debt, every cent of the debt would now be paid.⁴⁵ It was feared at first that the nationalization of the railways would endanger the business of the state, but instead the railroads have become a money producing agency based upon the policy that railway rates and fares are more readily paid than an increased rate of taxation.

The reduction of freight rates and the growth of profits have not been at the expense of technical improvements. In the matter of size of cars and trainloads, introduction of steel cars, automatic couplings, tunnels, terminal facilities, and in many other technical matters, the railways of Prussia are inferior to those of America. At the same time, the state railroads of Prussia are making greater

⁴² *Ergebnisse des Betriebs*, etc., 1906, pp. 50-51.

⁴³ B. H. Meyer, *Jour. Pol. Econ.*, Feb., 1906, p. 97.

⁴⁴ *Ergebnisse des Betriebs*, etc., 1904, p. 11.

⁴⁵ Prof. B. H. Meyer in *Jour. Pol. Econ.*, Feb., 1906, p. 96.

progress than other railways of Europe—whether private or state. In 1904, 128,747,348 marks were expended on the increase and maintenance of rolling stock, 177,771,095 on construction and 163,603,919 on general equipment and engines.⁴⁶ Larger engines and cars and better terminal arrangements are being introduced side by side with the reduction of rates and increased profits. Better use is being made of cars by means of telegraphic reports sent from each district to the directorate at Magdeburg, and by agreements permitting the use of foreign cars.⁴⁷ Where traffic is very dense special depots for particular freight are provided, instances of which are the cattle depot and fuel depot at Berlin,⁴⁸ the block signal system is almost universal, as far as possible dwellings are erected by the state for employees, who must live near the railways, refrigerator cars and special fast trains are introduced for perishable goods,⁴⁹ and, as in the United States, second, third, fourth and even fifth tracks are being constructed to avoid congestion of traffic.⁵⁰ As a general rule, these improvements are first introduced by the Prussian state railway, and then are gradually adopted by the private and other state railways of Germany.

The physical, social, political, governmental and economic conditions of Prussia differ from those prevailing in the United States. Prussian experience does not demonstrate the feasibility of government rate-making in America, nor does it demonstrate superiority over the American system of rates made by private railroads under partial government supervision; but, as applied under Prussian conditions, government rate-making has been industrially, commercially, financially and technically successful.

⁴⁶ *Ergebnisse des Betriebs*, etc., p. 33.

⁴⁷ *Ibid.*, p. 62.

⁴⁸ British Rept. on Prussian Railways, pp. 25-26.

⁴⁹ *Verwaltung der Öffentlichen Arbeiten in Preussen* (1901), p. 61.

⁵⁰ *Ibid.*, p. 15. *Ergebnisse des Betriebs* (1904), p. 10.

APPENDIX.

A NEW GERMAN PASSENGER TARIFF.¹

The negotiations among the several states of the German Empire for a uniform passenger tariff, which have been pending some two years, have resulted in an agreement, and the reformed tariff will probably go into effect May 1, 1907. The basis of the new tariff is as follows:

	Class 1.	Class 2.	Class 3.	Class 4.
Pfennige, per kilometer....	7.0	4.5	3.0	2.0
Equals, cents per mile	2.68	1.72	1.15	0.767

The chief obstacle to a uniform tariff was the objection of the South German states to the introduction of the fourth class, and this has not been wholly overcome; for in Bavaria and Baden no fourth class cars are contemplated; but on local trains only the fourth class rate will be charged for third class cars, the rate being known as 3b.

With these rates there will be no reduction for round-trip tickets, and no free baggage. The above rates are for ordinary passenger trains. For express trains there will be an addition, but not as heretofore, an addition of so much per kilometer, but a fixed sum for three zones, namely:

	Kilometers		
	1 to 75.	76 to 150.	More than 150.
Classes 1 and 2.....	0.50 pf.	1.00 mk.	2 mk.
Class 3.....	0.25 "	0.50 pf.	1 "

That is, for distances less than 47 miles, the ticket will cost 6 cents more in the third class and 12 cents more in the higher classes; 47 to 93 miles, 12 cents third and 24 cents first and second; all greater distances, 24 cents third and 48 cents in higher classes. This, it will be seen, is a substantial addition to the fare for short distances; thus, New York to Stamford second class, 54 kilometers, the fare would be 2.33 marks by passenger train and 2.83 by express; to New Rochelle, half as far, the fare is 1.16 marks by passenger train and 1.66 by express; in the first case 21 per cent, in the other 41 per cent more for the fast train. But for great distances the charge for speed is inconsiderable: 24 cents to Philadelphia and only 48 cents for the longest distance for which tickets are issued. The purpose of this, doubtless, is to keep local travel off from long-distance express trains; but it would seem to be disadvantageous for the longer distance suburban trains, such as New York-Morristown, New York-Tarrytown, or New York-Stamford; where a whole train can be filled at either terminus, to the advantage both of carrier and passenger.

What we would call coupon tickets over two or more different lines by the new tariff will cost 0.115 cent more per mile for the first and second class and 0.077 cent more for third class than the tickets over one line; but they have the important advantage that they are good both on passenger

¹ Reprinted by permission, from the Railroad Gazette of February 15, 1907.

and express trains. As comparatively few journeys as long as 300 miles can be made without such tickets, the one mark and two mark additions for express trains for all distances above 93 miles have very much fewer applications than they would have in a country like this. Suburban and holiday tickets, school and workmen's tickets are excepted from the uniform tariff, but most other commutations, such as mileage and book tickets, are prohibited.

There has been heretofore on some (perhaps all) of the roads affected an allowance of 25 kilograms (55 lbs.) free baggage. By the reformed tariff all baggage taken in baggage cars will be charged at the following rates for every 25 kilograms:

Zone.	Marks.	Zone.	Marks.
I to 25 km.	0.20	351 to 400 km.	2.00
26 " 50 "	0.25	401 " 450 "	2.25
51 " 100 "	0.50	451 " 500 "	2.50
101 " 150 "	0.75	501 " 600 "	3.00
151 " 200 "	1.00	601 " 700 "	3.50
201 " 250 "	1.25	701 " 800 "	4.00
251 " 300 "	1.50	More than 800 km. ..	5.00
301 " 350 "	1.75		

That is, for less than 16 miles, 4.8 cents for 55 lbs. or less; anything more than 55 lbs. up to 110 doubles the charge; 16 to 31 miles, 6 cents; then an addition of 4.8 cents for every 31 miles up to 310 miles; 12 cents for every 62 miles up to 500 miles, and for all distances greater than 500 miles \$1.19 per 55 lbs. This makes New York to Philadelphia 18 cents for 55 lbs., 36 cents for 56 to 110 lbs., and 54 cents for the 150 lbs. free baggage allowed on American railroads. New York to Washington or Boston our allowance of free baggage would cost \$1.43; Chicago to Buffalo, \$3.57; but no more from Chicago to New York. These rates are likely to make the passenger think twice before he packs his trunk; which is doubtless desirable. In one country where the matter was investigated, it was found that not one passenger in seven had any baggage for the baggage car, and it is questioned whether the six should be taxed for the benefit of the one who does have baggage; that is, whether they should pay as much as though they had baggage.

In comparing with conditions here, it should be remembered that the free baggage allowance in Germany heretofore has been but 55 lbs. (where there was any), and that the German cars enable the passenger to carry into the car with him probably more than three times the amount of baggage that he could dispose of conveniently in one of our cars. At the above rates baggage may be taken up to the weight of 440 lbs. on one ticket. For weights in excess of this the rates are doubled. Applying these rates to the journey from New York to Chicago, with the allowance of 150 lbs. of baggage (165 lbs. would cost no more), we have:

	Class 3.	Class 2.	Class 1.
Fare	\$10.71	\$16.07	\$24.99
Speed .....	.24	.48	.48
Baggage	3.57	3.57	3.57
Total	\$14.52	\$20.12	\$29.04

The German second class cars are as good as our first class on most long routes. The first class can hardly be said to be better, but there is usually plenty of room in them. If we take a passenger without baggage, the charge is reduced to \$10.95, \$16.55 and \$25.47 respectively.

Journeys of that length, however, are extremely rare in Germany; and even those of half that length are not common. From New York to Buffalo the German charges would be:

	Class 3.	Class 2.	Class 1.
Fare	\$5.05	\$7.58	\$11.79
Speed .....	.24	.48	.48
Baggage	2.85	2.85	2.85
Total	\$8.14	\$10.91	\$15.12

This is an unfavorable specimen on account of the baggage; if the distance were only five miles less the charges would be 36 cents less. New York to Boston or Washington (say 370 kilometers) we have:

	Class 3.	Class 2.	Class 1.
Fare	\$2.64	\$3.96	\$6.16
Express .....	.24	.48	.48
	\$2.88	\$4.44	\$6.64
Baggage	1.43	1.43	1.43
Total	\$4.31	\$5.87	\$8.07

No figures are given for fourth class fares, because fourth class cars are not run on express, nor for long distances. In considering these comparisons it should be remembered that the German fares are to be good on all state railroads in the German Empire, and our figures are chiefly for the routes of heaviest travel and lowest fares in this country. Comparisons with routes in the far West and the South would be much more unfavorable for the American lines. There are nowhere in Germany districts where population is so thin and travel so light as in many parts of this country. Further, it should be remembered that an overwhelmingly large part of the German travel is third class. Again, there is now a tax on tickets, which adds to the traveler's expense, though not to the railroad's income.